Chapter 2: Rational Numbers & Equations

2.6b Solving Inequalities

Unit Title: Weighing In

Unit Question: Am I Balanced?

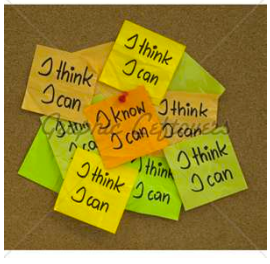
Learner Profile: Balanced

Area of Interaction: Health & Social Education

Sep 19-6:11 PM

I Can Statement:

I can solve and graph 1 step inequalities with multiplication & division.



Sep 19-6:16 PM

Reminder: Inequality symbols:

< less than, 

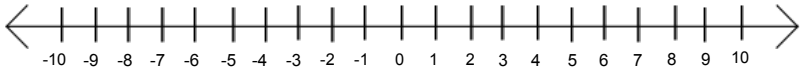
> greater than 

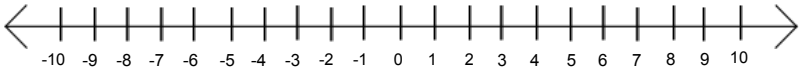
≤ less than or equal 

≥ greater than or equal 

Feb 1-10:58 AM

Graphing Inequalities Review:

$x > -3$ 

$x \leq 2$ 

$x + 2 < -4$ 

Feb 1-1:01 PM

We know that 1 < 3.

What happens if we multiply both sides by 3?

$3 < 9$

What happens if we multiply both sides by -3?

$-3 \not< -9$

$-3 > -9$

Feb 3-5:15 AM

We know that 8 > 4.

What happens if we divide both sides by 2?

$4 > 2$

What happens if we divide both sides by a -2?

$-4 \not> -2$

$-4 < -2$

Feb 3-5:17 AM

RULE: If we multiply or divide both sides of an inequality by the same negative number, then we need to switch the inequality sign.

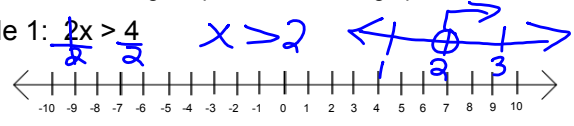
Feb 3-5:18 AM

In order to graph inequalities you will go through the same process as solving an equation, just remember to switch the inequality sign if you multiply or divide both sides by a negative.

Solve the following inequalities and then graph the answer.

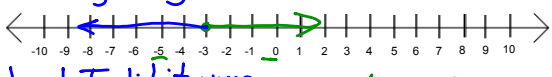
Example 1: $2x > 4$

$\frac{2x}{2} > \frac{4}{2}$ $\quad x > 2$



Example 2: $-3x \leq 9$

$\frac{-3x}{-3} \leq \frac{9}{-3}$ $\quad x \geq -3$



Pretend I did it wrong

$\frac{-3x}{-3} \leq \frac{9}{-3}$

$x < -3$

Check

$-3x \leq 9$

$-3(0) \leq 9$

$0 \leq 9$ ✓

Check

$-3x \leq 9$

$-3(-5) \leq 9$

$15 \not\leq 9$ ← Recheck my work

Feb 1-1:44 PM

Example 3: $\frac{x}{2} > -2$ · 2 $x > -4$

Example 4: $\frac{x}{-1} \geq 3$ · -1

$x \leq -3$

Check

$\frac{x}{-1} \geq 3$ $\quad \frac{-4}{-1} \geq 3$

$4 \geq 3$

Feb 1-1:49 PM

Solve the following inequalities. You do not have to graph the solution.

Example 5: $\frac{x}{-2} \leq 10$ · -2

$x \geq -20$

Example 6: $-3x > -30$

$\frac{-3x}{-3} < \frac{-30}{-3}$

$x < 10$

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Example 7: $\frac{10.6}{-2} \leq \frac{-2x}{-2}$

$2\overline{)10.6}$ 5.3

$-5.3 \geq x$

$x \leq -5.3$

Example 8: $\frac{-\frac{3}{4}}{\frac{1}{4}} > \frac{\frac{1}{4}x}{\frac{1}{4}}$

$x < -3$ $\quad -3 > x$

$-\frac{3}{4} \div \frac{1}{4}$

$\frac{3}{4} \times \frac{4}{1} = \frac{12}{4}$

Nov 26-8:48 PM

Assignment:

Worksheet

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